ABSTRACT OF THE DISCLOSURE

High throughput liquid chromatography systems include multiple separation columns and multiple flow-through detection regions in sensory communication with a common radiation source and a multi-channel detector. Preferred detector types include a multi-anode photomultiplier tube, a charge-coupled device detector, a diode array, and a photodiode array. In certain embodiments, separation columns are microfluidic and integrated into a unitary microfluidic device. The optical path through a detection region is preferably coaxial with the path of eluate flow along a flow axis through a detection region. On-board or off-board detection regions may be provided.